central artery. The hemorrhages would look like an exudation from the plugging up of the vein.

C. S. G. Nagel, San Francisco: I should like to say that thrombosis of the central vein is, in the majority of cases, universal, according to my experience. I can remember offhand 8 or 10 cases, and I should say that in less than 1 per cent. the thrombosis was limited to one or more branches of the vein. Complete recovery, as in this case, is not the rule. Regarding the etiology, I think it is of perhaps great practical interest, from a prophylactic standpoint, to remember the occurrence of venous thrombosis in connection with erysipelas. We are indebted to Knapp for an observation which clearly shows that through thrombosis the orbital veins, thrombosis of the central retinal vein can take place which subsequently leads to optic atrophy even, as in several cases reported, in both eyes. I myself have seen a case of double atrophy following erysipelas, and one unilateral. In conclusion I should like to briefly report, in connection with this paper, the history of a patient I saw about two weeks ago for the first time, which is unique. I am indebted to Dr. F. W. Birtch of St. Luke's Hospital for the examination. The general condition is not yet well investigated. There is arterio-sclerosis, and as the principal symptom a central scotoma in each eye. In both eyes the ophthalmoscope shows along both upper temporal veins, degenerated roundish patches somewhat resembling in general arrangement the hemorrhages in Dr. Alexander's picture, only closer to the veins. In addition, in the macular region of the left eye, there is a rather diffuse hemorrhage which would not admit by mere inspection of analysis. Near the macula of the right eye there is a thrombosis in a small vein and two round hemorrhages near that vein and several streaky ones; one can follow out this empty vein into its major branch which is apparently normal, the upper and lower temporal veins are distended.

E. W. Alexander: I reported this case principally to illustrate the value which a study of the retina has in the general medical cases under our observation. There has been a great deal written in literature on this subject recently and its value, particularly in the way of prognosis and prophylaxis, is very important not only in the vascular system in the brain, but in the kidneys and other parts of the body. This case is very apt and appropriate in that line. The question of embolism as such and obstruction to the central retinal vessels can be divided into two schools—one which claims that there is no such thing as an embolus, even of the retinal arteries, these are the continental students, Haab and Reimar, and the English school which claims that though embolus is very infrequent, it has occurred in some six reported cases. Anatomically with very few exceptions, these cases, then, have been proven not to be absolute embolus, but as is generally, due to angiosclerosis. The frequent floating of small bodies into the retinal vessels cannot be accepted in view of the improbability of their entering one of the small vessels in such a far off part, and the fact that the ophthalmic artery branches at right angles from the carotid. Clinically this case is clearly a thrombosis. There are no retinal lesions in the periphery. In this case an absolute diagnosis could not be proven without an anatomical examination. Partial thrombi practically always clear up—and rather rapidly.

XANTHELASMA.*

By D. FRIEDLANDER, M. D., and G. H. MIZE, M. D., San Francisco.

Xanthoma was first described by Rayer[1] and the clinical picture is the same to-day, as it was when portrayed by him in 1835, but much has been added to our knowledge of the histopathology and etiology of the affection. In view of the comparative rarity of the cases reported, Crocker[2] finding only four cases among 15,000 skin cases, and Cooper Dermatological Clinic only eight cases in 3,000 patients, we have presented a résumé of the cases with microscopic preparations of this condition.

Undoubtedly the small percentage of cases is due to the fact that the disease is not of sufficient severity, itself, to call for dermatological services, and is only met with incidentally.

Hutchinson[3] limits the term Xanthelasma to the form of growth involving only the eyelids and contiguous tissues, while under the term Xanthoma he includes all cases in which the growth appears on the trunk and limbs. He further classifies cases of Xanthelasma under the following subdivisions:

First; *Xanthelasma Planum or Flavum;* in which the predominant symptom is the wash-leather type originally described by Rayer.

Second; *Xanthelasma Sebaceum;* in which comedones are present.

Third; *Xanthelasma Cysticum;* in which cysts accompany the xanthelasma.

Fourth; *Xanthelasma Pigmentosa;* in which dark pigment is the only condition present.

The cases which we have to report are of Xanthelasma Planum Palpebrarum and were observed in Dr. Friedlander's Dermatological Clinic at Cooper Medical College.

Under the term Xanthoma is included a less common affection which may involve the skin surfaces of the trunk and limbs, and also the peritoneum and mucous membrance,[4] eyelids,[5] endothelium of the heart and blood vessel,[5] cornea,[6] esophagus, capsule of the spleen and liver, [7] mouth, lips, tongue, trachea and bile ducts.

Xanthelasma usually appears first on the eyelids, but may subsequently spread to other portions of the body, and this occurs in about 7% of the cases[13]. Pye-Smith[4] reports a case in which the malady involved the peritoneum and mucous membranes and Leube [5] reported a case where the heart and blood vessels were subsequently involved, causing valvular lesions. Von Graefe[6] demonstrated three cases in which a similar condition involved the cornea. In Lehzen and Kauss's[9] case there was found on the side of the mitral valve facing the aorta, a continuous chain of four Xanthoma plaques, each one-half inch in diameter, of a bright yellow color. Both coronary arteries, particularly the left, were the seat of numerous yellow deposits the size of a pinhead.

Xanthoma Palpebrarum or (Xanthelasma) constitutes by far the greater number of cases of Xanthoma, Pollitzer[10] estimating its ratio to the generalized form as 100 to 1.

It practically always occurs in the form of plaques on the base of a pigmented area, usually commencing near the inner canthus of the left eyelid,[7] although in two of our cases it started on the right lower eyelid. It increases slowly in size and, by the coalescence of individual plaques, it may entirely surround the eye and it is only a question of time until the lids of the opposite eye are affected.

* Read before the Cooper College Science Club, February 6, 1911.

The plaques, which are imbeded in the skin, are slightly raised above the surface, sharply defined, smooth, opaque and yellow, although, viewed with a hand-lens, each patch appears to be composed of numerous, crowded, small yellowish spots each with a central reddish point.[7] The epidermis over the patches is normal,[11] and the internal patches are identical histologically with the external.

While the lesions are usually devoid of sensory disturbances, Stelwagon[7] states that occasionally the patient complains of a burning sensation at the site of the plaque.

Almost all authors agree that the color of the patches is mainly due to an accumulation of fat, although a considerable quantity of brown and yellow pigment in the interstices between the cells assists in the production thereof, while Kaposi[12] maintains that the yellow color depends on a collection of oil granules, which is a true deposit of fat, leaving the surrounding tissues unchanged in structure and capable of active function. Chauffard[25] and Pincus and Pick[24] claim that this deposit is not a true fat, as it differentiates under Sudan III and osmid acid from the normal cutaneous fat.

The Xanthelasma patches may occur without any demonstrable etiological factor, but they usually appear on persons having a dark complexion and are most commonly associated with some general condition capable of producing a pigmented areola around the eyes,[14] such as pregnancy, any lesion causing jaundice, various disorders of the liver, ovarian changes, nervous fatigue,[13] or gout [2]. In Hutchinson's patients 50% suffered from migraine and 16% had jaundice, and of our eight cases four had jaundice.

Jaundice frequently precedes Xanthelasma Palpebrarum and is almost invariably associated with the generalized exanthoma. Crocker estimates that 80% of the cases of generalized Xanthoma are accompanied by jaundice, and twenty-three out of twenty-eight cases reported by the London Pathological Society were so affected,[7] also Kaposi[12] found jaundice in 15 out of 27 cases of generalized Xanthoma, and Champard [23] found it present in 22 out of 58 cases.

Various causes of jaundice have been reported, as cirrhosis of the liver in its different forms,[6] syphilis of the liver,[4] gall stones in the hepatic duct,[3] hydatid cyst,[3] carcinoma of the junction of the hepatic and common ducts, with secondary growths in the liver,[17] and stricture of the hepatic duct due to carcinoma of the liver with involvement of the lymph glands around the duct.[30]

Chauffard,[25] following the lead of Pincus and Pick,[24] claims the condition has, for an etiological factor, a true cholesterinemia and very aptly compares the process to gout. The Xanthelasma plaques correspond to the tophi; the cholesterinemia to the uric acid in the blood; furthermore both affections are constitutional, and, to further carry out the analogy, the only beneficial treatment of the local lesions, in both cases, is surgical; and that of the constitutional condition, prophylactic measures.

The disease affects females most frequently,[7] and the proportion of females to males varies according to the statistics of different authors, some stating the ratio to be 3 to 2 while others estimate the proportion to be 2 to 1.[18] Of the eight cases of Xanthelasma observed by us all were females.

Heredity seems to play a considerable role in the predisposition to this condition, particularly in the generalized form. Of the six cases reported by Church in a single family five were females, while Fagge [14] reports an instance in which the malady made itself manifest in four generations and Wilks [15] reports a case in which the mother and daughter were affected. The palpebral form apparently never occurs under the age of puberty, and Hutchinson[13] is responsible for the statement that "it is probable that patients who develop Xanthoma unusually early in life are experiencing prematurely other forms of senile change." One of our cases gives a history of her mother and sister having been afflicted with Xanthelasma.

The growth of the patches tends to slowly but steadily progress and requires several years for its complete development, and Saboraud,[16] Pye-Smith,[4] Pollitzer,[10] Hutchinson[13] and most other authors agree that Xanthelasma, once established, never spontaneously disappears. Hutchinson[13] makes the following statement in the London Chirurgical Transactions of March, 1871, viz.: "If any eruption supposed to resemble Xanthelasma shows a definite tendency to spontaneously subside, the correctness of the diagnosis should be questioned." After searching all available literature we have been able to find the report of only one case where the patches on the eyelids were fully developed, in which they disappeared spontaneously. This case, reported by Legg,[17] was one of generalized Xanthoma in which the lesions disappeared without treatment. The patches are of little or no prognostic value as they evidence of past rather than approaching disturbance,[18] and may show themselves long after the predisposing cause has ceased to exist, and it is not improbable that the lesions result from derangement of the function of the skin of the eyelids.[18] Although the fatty substance of Xanthelasma undergoes no change, the cells neither secreting nor breaking down,[19] the skin glands are likely to be affected by recurring disturbances in the nutrition of the eyelids, such cases being embraced in Hutchinson's classification of Xanthelasma cysticum, in which the sebaceous glands are most often involved; the sudoriparous seldom.[3] In the sebaceous form the affected glands appear as globular, pea-sized cysts filled with very firm sebaceous matter and usually surmounted by a comedone. They seldom become larger than a pea and are never inflamed.

On examining a microscopical section of one of the patches the epidermis and the papillary layers of the cutis are found to be normal,[11] the chief changes appearing in the middle and lower layers of the cutis.[7] The deductions from the observations of Pavy,[27] Moxen,[28] Frank Smith,[26] Waldeyer,[20] Howse, Legg,[29] Kaposi,[30] Fagge[14] and Pye-Smith[4 8] confirm the opinion that Xanthelasma consists in a

chronic hyperplasia of the deeper layer of the cutis, in which the papillae, epidermis, and subcutaneous tissue are only secondarily involved. On section the Xanthelasma plaque is found to consist of almost parallel rows of cords separated by large lymph spaces,[19] and these cords are composed of opaque, poorly defined clumps which are very refractile and have a mulberry formed surface relief, and this appearance is almost characteristic, being found in only one other condition, i. e., leprosy.[19]

In addition to these cord-shaped formations there is a cell which is considered by some authors to be characteristic of Xanthoma. This is the so-called "Xanthoma cell" or "Xanthoma giant cell." It is not a true giant cell but consists of a cell with a sharply defined membrane, within which are from one to thirty nuclei. These nuclei are arranged in a circle around a cloudy center. Between the cell membrane and the nuclei ring is a wide, clear, protoplasmic zone filled with fat globules.[22] These large giant cells are very abundant and are regularly distributed from the surface of the skin downward, which fact differentiates them from the giant cells of tuberculosis or lues. Pollitzer[22] [10] questions the existence of the so-called "giant cell" and advances the theory that the structure described is a degenerated muscle fiber, others consider the Xanthoma cell to be modified connective tissue cell, a fourth group of authors advance the theory that it is an endothelial cell, while a fifth group consider it to be a hypertrophic fat cell.

Weldeyer[20] asserts that the fatty infiltration does not appear to have a destructive influence on the cells themselves, while other authors, notably Pollitzer[22] dispute this assertion. Pollitzer maintains that the muscle fibers are replaced by fat, and he demonstrates that the rows of fat cells found in this condition correspond to the distribution of the muscle fibers in the skin of the eyelids.[22]

In the two sections which Dr. Dixon has so kindly prepared for us the above-described features can be nicely seen. The epidermis and papillary layers of the cutis are normal, with the chief changes in the corium. The fat in one specimen is well stained and in this preparation giant cells can be seen in profusion.

Xanthelasma palpebrarum must be differentiated from milium, but the latter is white and if one be punctured the contents may readily be shelled out.[11] Xanthoma multiplex might be confused with Xanthoma-like lesions in urticaria pigmentosa, but if examination be made, other manifestations of urticaria can be discovered. It must also be borne in mind that Xanthoma multiplex occurs predominantly in adults.

Various forms of treatment have been advised for the cure of Xanthelasma and good results have been reported following the use of several methods. Bessnier[21] reports a case in which good results were obtained from the use of phosphorous in oleii morrhuae, Stern[25] removed the patches from the eyelids with a 10% solution of hydrargyri bichloridi in collodium, and Saboraud[16] advises that the Xanthoma patches be treated with a fine galvano-cautery at intervals of 1 to 2 mm. He states that the lesions disappear after three sittings at fortnightly intervals. Electrolysis is recommended by Pye-Smith,[8] and Stelwagon[7] recommends that a 25% salicylic acid plaster be continuously applied to the Xanthoma plaque for several days. He, however, prefers a more sure and safe method of effectively and completely removing the neoplasm, and that is excision. In one of our cases excision was performed with excellent cosmetic results and no recurrence has occurred to date.

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Discussion.

Howard Morrow: There is very little to be said about this interesting and complete paper. A few remarks may be added so that one could get a clear idea of the subject by eliminating a few of the subdivisions. We have the general divisions of Xanthoma tuberosum or multipex and Xanthelasma. The first must be subdivided into the form associated with diabetes and the variety not associated with diabetes—they resemble each other closely. The diabetic form comes on more acutely and disappears more rapidly. It is not advisable to subdivide Xanthelasma. As stated in the paper, Pollitzer of New York has done more work along this line than any other man, and he tells us that eyelid Xanthelasma is a fatty degeneration of the muscular fibers going into the skin. Then there is the tuberous form of Xanthoma, which is a connective tissue new growth with a certain amount of fatty degeneration. It is advisable to separate these two forms of Xanthoma because they are absolutely different clinically. In the tuberous form or the multiple nodular variety we have a condition that is very rare. It is usually found in young adults and has a tendency after a few months, or years, to clear up, particularly the diabetic form; it has a generalized distribution, is seldom found on the face and is usually most marked over the knees, elbows and

hips. Xanthelasma is limited to the face and is incurable.

D. Friedlander: There are only two points in this paper which I wish to emphasize, first, the small percentage of these cases shown by statistics and the relative frequency of the affection. This is due to the fact that patients rarely come to this clinic for the condition of their eyelids, not deeming it to be of sufficient severity to demand treatment. The second point concerns the etiology of this disease, the recent researches of Chauffard, Pincus and Pick clearly demonstrating the condition to be due to a true cholestrinemia, and consequently all treatment, outside of the removal of the deposits, must be of a prophylactic nature.

Harry E. Alderson: The gentleman who presented the subject and those who have discussed it have covered much of the ground, so that there is little left for me to say. Personally, I have recently removed some pretty good sized Xanthelasma lesions from the upper eyelid of one of my patients by electrolysis. The result was very satisfactory. The etiology and the pathology of this condition have been discussed, but the later work of Pollitzer has not been given sufficient notice. He has a most interesting and instructive article in the December number of the Journal of Cutaneous Diseases, in which he presents convincing reasons in support of his claim that Xanthelasma is a fatty degeneration of the fibers of the orbicularis palpebrarum muscle. He refers to the occurrence of the lesions as elongated plaques whose axes are parallel to the course of the orbicularis palpebrarum fibers, and demonstrates in a series of illustrations the different phases in the degeneration of these muscle fibrillae, terminating finally in localized plaques of fatty degeneration. I would like very much to hear Dr. Ophuls' explanation of the presence of the giant cells shown to-night in the specimen under the microscope.

Wm. Ophuls: I believe that the giant cells observed in these growths may be in the nature of foreign body giant cells. It is interesting in this regard that whenever there is disturbance in the fatty tissue, giant cells are apt to form. In inflammatory conditions in the mammary glands, giant cells are apt to form, because fat has decomposed, as the result of which there is formation of crystalline foreign bodies, fatty acids and cholesterin. In tumors in which there is much fat, such as those under discussion, I presume that giant cells may form in the same way.

Major P. M. Ashburn: Among several cases of acetone recently in our hospital, has been one presenting a peculiar yellow coloration of the skin. The skin of the palms and backs of the hands, the soles and backs of the feet, a butterfly patch on the cheek bones and nose and that of the lower forehead presented a pigmentation varying from pale yellow to the deep yellowish brown stain seen on the hands of many cigarette smokers. The patient has been in the hospital for several months, has continually passed large amounts of sugar, even on a carbohydrate free diet, and has always had acetone in his urine and on his breath. The pigmentation in question appeared a few months ago, but has lately been fading and has almost disappeared at the present time. That it might be related to Xanthelasma was suggested by the fact that this trouble does affect some diabetics, that one important element of it is an excessive amount of fat in the skin, and by the further fact that a diabetic who died in the hospital a few months ago had so much free fat in his blood that on standing it separated into two layers, cream and blood, bearing the relative proportions of 22 to 35. I therefore had this patient's blood examined for free fat, which was found in excess, though in nothing like the proportions of the other case. I should like the opinions of others as to the possible relationship of the pigmentation in this case to Xanthelasma.

G. H. Mize: According to Crocker and Stellwagon the chief changes appear in the middle and lower layers of the corium and, in reply to the question as to whether there is a fatty change in the vessels, I would state that the only record of such condition that I could find were the cases of Leube, who reports Xanthomatous plaques on the valves of the heart and aorta, and Lehzen and Kauss where a similar condition affected the mitral valves and both coronary arteries. In reference to the work of Pollitzer, I deemed it sufficient to mention this since, although his theory sounds plausible and may be entirely correct, it is as yet unsubstantiated by other investigators.

MEDICAL NOTES TAKEN IN SOUTH AMERICA.*

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

While on our way to South America the captain of the steamer remarked that we would see, south of the equator, a world very much alive, and we did. The medical profession in Buenos Aires partakes of this activity. The mental attitude of the physicians of a community always resembles that of the general people, and an open mind, and hospitality toward criticism are characteristics of the Argentino. The Argentine medical men, therefore read and compare, and talk over their work, and they know what is occurring in their profession in the European centers, and in the United States. They do not sit in "the scorner's seat," that refuge for incompetents in all ages and countries. They write, and write well, and some cases of disease of the skin that I saw demonstrated before the Argentine Dermatological Society were well worked out both pathologically and clinically. In fact there is more written on medical subjects in the Argentine than in Spain itself.

In the Medical Department of the University a just amount of attention is given to diseases of the skin, which are, as they should be, separated from diseases of the genito-urinary system. Dr. Baldomero Sommer, who occupies the chair, takes the students twice a week. The day I was present the students first heard a lecture of half an hour on the treatment of leprosy, they then were taken into the ambulatory clinic, where they made diagnoses and formulated lines of treatment. The students were fine, intelligent looking fellows, and went about their work quietly and seriously. The school is coeducational, and there was one woman in the class. The only language spoken was Spanish, but all the text books were in French.

When in Mexico City and in Guadalajara some years ago, I ran across the same state of affairs as regards text books. Their only books in Spanish were Ramon y Cajal's Histology, and a treatise on obstetrics, yet the students heard lectures and recited their examinations in Spanish. The failure, however, to get such a large part of one's mental nutrition delivered in the mother tongue is a defect, and must impede originality in a thousand ways. Many deplore the flood of medical literature in our own country, but they might just as well

* Read before the California Academy of Medicine, March 27, 1911.